

Claims

What is claimed is:

1. A solid composition comprising:
a solid binding agent comprising HEDTA and water, wherein the HEDTA cooperates with the water in the formation of the binding agent.
2. The composition of claim 1, wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 20:1 to about 1:1.
3. The composition of claim 1, wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 14:1 to about 1.3:1.
4. The composition of claim 1, wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 6:1 to about 1.5:1.
5. The composition of claim 1, wherein the composition further includes an additional functional ingredient.
6. The composition of claim 1, wherein the composition comprises a solid cleaning composition including the binding agent and one or more functional ingredient, wherein the binding agent is distributed throughout the solid cleaning composition and binds the functional ingredient within the solid composition.
7. The composition of claim 1, wherein the composition further comprises a one or more functional ingredient including a chelating agent; a sequestering agent; an inorganic detergent; an alkaline source; an organic detergent; a surfactant; a cleaning agent; a rinse aid; a bleaching agent; a sanitizer; an anti-microbial agent; an activator; a detergent builder; a filler; a defoaming agent, an anti-redeposition agent; an optical brightener; a dye; an odorant; a secondary hardening agent, a solubility modifier, a pesticide, a baits for pests, or mixtures or combinations thereof.

8. The composition of claim 1, wherein the composition further comprises a chelating agent or a sequestering agent, or a mixture or combination thereof.

9. The composition of claim 1, wherein the composition further comprises an inorganic detergent.

10. The composition of claim 1, wherein the composition further comprises sodium tripolyphosphate.

11. The composition of claim 1, wherein the composition further comprises one or more surfactant.

12. The composition of claim 1, wherein the composition further comprises a linear alcohol.

13. The composition of claim 1, wherein the composition further comprises one or more organic detergent.

14. The composition of claim 1, wherein the composition further comprises a linear alkylate sulfonate.

15. The composition of claim 1, wherein the composition further comprises a source of alkalinity.

16. The composition of claim 1, wherein the composition further comprises an alkali metal salt.

17. The composition of claim 1, wherein the composition further comprises an alkali metal silicate.

18. The composition of claim 1, wherein the composition includes less than a solidification interfering amount of a component that can compete with the HEDTA for water and interfere with solidification.

19. The composition of claim 1, wherein the water used in creating the binding agent is present in the composition in the range of up to about 20 wt. % of the total composition.

20. The composition of claim 1, wherein the water used in creating the binding agent is present in the composition in the range of about 1 to about 10 wt. % of the total composition.

21. The composition of claim 1, wherein the HEDTA used in creating the binding agent is present in the composition in the range of up to about 93 wt. % of the total composition.

22. The composition of claim 1, wherein the HEDTA used in creating the binding agent is present in the composition in the range of about 5 to about 40 wt. % of the total composition.

23. The composition of claim 1, wherein the composition is extruded to form a solid block.

24. The composition of claim 1, wherein the composition is formed into a solid mass having a weight in the range of 50 grams or less.

25. The composition of claim 1, wherein the composition is formed into a solid mass having a weight in the range of 50 grams or greater.

26. The composition of claim 1, wherein the composition is formed into a solid mass having a weight in the range of 500 grams or greater.

27. The composition of claim 1, wherein the composition is formed into a solid mass having a weight in the range of 1 kilogram or greater.

28. The composition of claim 1, wherein the composition is cast into a solid shape.

29. The composition of claim 1, wherein the composition is extruded into a solid shape.

30. The composition of claim 1, wherein the composition is formed into a solid shape.

31. The composition of claim 1, wherein the solid is in the form of a pellet.

32. The composition of claim 1, wherein the composition is in the form of a solid block formed within a container.

33. A solid cleaning composition comprising:
a solid binding agent comprising HEDTA and water, wherein the HEDTA cooperates with the water in the formation of the binding agent, and wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 14:1 to about 1.3:1; and

one or more functional ingredient, wherein the binding agent is distributed throughout the solid cleaning composition and binds the functional ingredient within the solid cleaning composition.

34. A solid cleaning composition produced by the process comprising:
providing one or more functional cleaning ingredients;
providing HEDTA;
providing water; and
admixing the one or more functional cleaning ingredients, the HEDTA, and the water such that the HEDTA and water cooperate to form a solid binding agent that binds the functional cleaning ingredient within the solid cleaning composition.

35. The solid cleaning composition of claim 34, wherein the mole ratio of water to HEDTA provided to form the binding agent is in the range of about 14:1 to about 1.3:1.

36. A binding agent for a solid composition, the binding agent comprising:
HEDTA; and
water, wherein the HEDTA cooperates with the water in the formation of the binding agent.

37. The binding agent of claim 36, wherein the mole ratio of water to HEDTA is in the range of about 14:1 to about 1.3:1.

38. A method of forming a solid composition, the method comprising:
providing HEDTA;
providing water;
admixing the HEDTA with the water such that the HEDTA cooperates with the water in the formation of a solid binding agent.

39. The method of claim 38, wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 20:1 to about 1:1.

40. The method of claim 38, wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 14:1 to about 1.3:1.

41. The method of claim 38, wherein the mole ratio of water to HEDTA present to form the binding agent is in the range of about 6:1 to about 1.5:1.

42. The method of claim 38, wherein the composition further includes an additional functional ingredient.

43. The method of claim 38, wherein the composition comprises a solid cleaning composition including the binding agent and one or more functional ingredient, wherein the binding agent is distributed throughout the solid cleaning composition and binds the functional ingredient within the solid composition.

44. The method of claim 38, wherein the composition further comprises a one or more functional ingredient including a chelating agent; a sequestering agent; an inorganic detergent; an alkaline source; an organic detergent; a surfactant; a cleaning agent; a rinse aid; a bleaching agent; a sanitizer; an anti-microbial agent; an activator; a detergent builder; a filler; a defoaming agent, an anti-redeposition agent; an optical brightener; a dye; an odorant; a secondary hardening agent, or a solubility modifier, or mixtures or combinations thereof.

45. The method of claim 38, wherein the composition further comprises a chelating agent or a sequestering agent, or a mixture or combination thereof.

46. The method of claim 38, wherein the composition further comprises an inorganic detergent.

47. The method of claim 38, wherein the composition further comprises sodium tripolyphosphate.

48. The method of claim 38, wherein the composition further comprises one or more surfactant.

49. The method of claim 38, wherein the composition further comprises a linear alcohol.

50. The method of claim 38, wherein the composition further comprises one or more organic detergent.

51. The method of claim 38, wherein the composition further comprises a linear alkylate sulfonate.

52. The method of claim 38, wherein the composition further comprises a source of alkalinity.

53. The method of claim 38, wherein the composition further comprises an alkali metal salt.

54. The method of claim 38, wherein the composition further comprises an alkali metal silicate.

55. The method of claim 38, wherein the composition includes less than a solidification interfering amount of a component that can compete with the HEDTA for water and interfere with solidification.

56. The method of claim 38, wherein the water used in creating the binding agent is present in the composition in the range of up to about 20 wt. % of the total composition.

57. The method of claim 38, wherein the water used in creating the binding agent is present in the composition in the range of about 1 to about 10 wt. % of the total composition.

58. The method of claim 38, wherein the HEDTA used in creating the binding agent is present in the composition in the range of up to about 93 wt. % of the total composition.

59. The method of claim 38, wherein the HEDTA used in creating the binding agent is present in the composition in the range of about 5 to about 40 wt. % of the total composition.

60. The method of claim 38, wherein the composition is extruded to form a solid block.

61. The method of claim 38, wherein the composition is formed into a solid mass having a weight in the range of 50 grams or less.

62. The method of claim 38, wherein the composition is formed into a solid mass having a weight in the range of 50 grams or greater.

63. The method of claim 38, wherein the composition is formed into a solid mass having a weight in the range of 500 grams or greater.

64. The method of claim 38, wherein the composition is formed into a solid mass having a weight in the range of 1 kilogram or greater.

65. The method of claim 38, wherein the composition is cast into a solid shape.

66. The method of claim 38, wherein the composition is extruded into a solid shape.

67. The method of claim 38, wherein the composition is formed into a solid shape.

68. The method of claim 38, wherein the solid is in the form of a pellet.

69. The method of claim 38, wherein the solid composition is in the form of a solid block formed within a container.